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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,980	07/10/2001	Toshiya Uemura	P 281542 T36-135083M/KOH	6932

909 7590 03/08/2002

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EXAMINER

SCHILLINGER, LAURA M

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 03/08/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/900,980

Applicant(s)

UEMURA, TOSHIYA

Examiner

Laura M Schillinger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 10 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Shakuda ('533).

In reference to claim 1, Shakuda teaches a device comprising:

A semiconductor laminate portion including a light-emitting layer (Col.6, lines: 5-15); and

A reflection surface disposed so as to be opposite to a side surface of the semiconductor laminate portion, wherein the semiconductor laminate portion and the reflection surface are provided in one and the same chip (Col.6, lines: 14-21).

In reference to claim 2, Shakuda teaches wherein the reflection surface reflects light from the side surface of the semiconductor laminate portion into a direction of an optical axis of the light-emitting device (Col.12, lines: 30-45).

In reference to claim 3, Shakuda teaches wherein a distance between the reflection surface and the side surface of the semiconductor laminate portion is in a range of from 0.1 to 10 um (col.11, lines: 40-60).

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In reference to claim 4, Shakuda teaches wherein the reflection surface is made of a material which is the same as that of an n pad electrode (Col.12, lines: 10-40).

In reference to claim 5, Shakuda teaches wherein a portion of the n pad electrode opposite to the side surface of the semiconductor laminate portion forms a second reflection surface (Col.12, lines: 10-20).

In reference to claim 6, Shakuda teaches wherein the reflection surface is formed on an n-type semiconductor layer which is formed by etching a first depth, and the n pad electrode is formed on the n-type semiconductor layer which is formed by etching to be a second depth shallower than the first depth (Col.12, lines: 15-35).

In reference to claim 7, Shakuda teaches wherein the reflection surface is formed integrally with the n pad electrode (Col.12, lines: 10-40).

In reference to claim 8, Shakuda teaches a device comprising:

A laminate of group III nitride compound semiconductor layers inclusive of a light-emitting layer (col.12, lines: 40-60);

A groove formed in the laminate (Col.12, lines: 5-15 and 40-55); and

A reflection surface formed on an outer side surface of the groove (col.12, lines: 55-68).

In reference to claim 9, Shakuda teaches wherein the groove is formed by a dicing saw (Col.12, lines: 20-32).

In reference to claim 10, Shakuda teaches wherein the reflection surface is made of a metal layer (Col.12, lines: 10-30).

In reference to claim 11, Shakuda teaches wherein the metal layer is made of a material which is the same as that of an n pad electrode, and the metal layer is formed at the same time when the n pad electrode is formed (Col.12, lines: 10-30).

In reference to claim 12, Shakuda teaches wherein light emitted from a side surface of the laminate is reflected by the reflected surface in a direction of an optical axis of the light-emitting device (Col.12, lines: 55-68).

In reference to claim 13, Shakuda teaches wherein the groove has a depth to reach a substrate (Col.12, lines: 45-55).

In reference to claim 14, Shakuda teaches wherein the groove is substantially parallel to the chip cutting line (Col.12, lines: 10-25).

Conclusion

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shakuda teaches a similar structure ('029 '681).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura M Schillinger whose telephone number is (703) 308-6425. The examiner can normally be reached on M-F 7:00 -4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1500.

LMS
February 19, 2002


Olik Chaudhuri
Supervisory Patent Examiner
Technology Center 2800